

WHAT IS CLAIMED:

- 1 1. An indexing system for generating an index of large volumes of trace data captured from
2 a computer network comprising:
3 a protocol analyzer operably connected to the computer network and having a
4 trace memory in which trace data from the computer network is selectively stored;
5 hardware circuitry that selectively identifies locations in the trace memory of
6 desired portions of the trace data; and
7 a processor that utilizes the locations identified by the hardware circuitry to
8 generate an index for the trace data stored in the trace memory.
- 1 2. The system of claim 1, wherein the hardware circuitry is a hardware search engine
2 operably connected to the trace memory.
- 1 3. The system of claim 1, wherein the protocol analyzer includes the hardware circuitry and
2 the processor as part of the protocol analyzer.
- 1 4. The system of claim 1, wherein the computer network is a storage channel network and
2 the trace data comprises frames of packetized data having a header portion and a data portion and
3 the protocol analyzer analyzes the header portion to determine an activity associated with the
4 frame.
- 1 5. The system of claim 4, wherein the storage channel network uses a Fibre Channel
2 communication interface protocol.
- 1 6. The system of claim 1, wherein the hardware circuitry receives from the processor
2 specified time intervals and the hardware circuitry utilizes the specified time intervals to identify
3 the desired portions of the trace data.

1 7. The system of claim 6, wherein the hardware circuitry receives a first set of specified
2 time intervals to create a coarse index and a second set of time intervals to create a fine index.

1 8. The system of claim 7, wherein the coarse index indexes a first percentage of less than .
2 about 5% and the fine index indexes a second percentage of greater than the first percentage and
3 less than or equal to 100%.

1 9. The system of claim 1, wherein the trace data includes a header portion and a data portion
2 for each record and the hardware circuitry analyzes the header portion of the trace data.

1 10. The system of claim 1, wherein the processor automatically initiates generation of the
2 index upon completion of a trace.

1 11. The system of claim 1, wherein the hardware circuitry searches for a first time stamp
2 encountered in each of a series of blocks of trace data in the trace memory and the processor
3 utilizes the first time stamps to build a time index for the series of blocks of trace data.

1 12. A method of generating an index of large volumes of trace data captured from a computer
2 network using a protocol analyzer operably connected to the computer network comprising:
3 using hardware circuitry to selectively identify locations in the trace memory of
4 trace data for desired portions the trace data; and
5 utilizing the locations identified by the hardware circuitry to generate an index for
6 the trace data stored in the trace memory.

1 13. The method of claim 12, wherein the desired portions are on specified time intervals
2 representing different durations from a given triggering event associated with the trace data
3 stored in the trace memory and the index that is generated is a time index.

1 14. The method of claim 13, wherein the hardware circuitry is provided with a first set of
2 specified time intervals to create a coarse index and with a second set of time intervals to create a
3 fine index.

1 15. The method of claim 12, wherein the generation of the index is automatically initiated
2 upon completion of a trace.

1 16. The method of claim 12, wherein the hardware circuitry searches for an initial time stamp
2 encountered in each of a series of blocks of trace data in the trace memory and the initial time
3 stamps are utilized to generate a time index for the series of blocks of trace data.

1 17. A method of generating a time index of large volumes of trace data comprising:
2 captured trace data from a computer network using a protocol analyzer operably
3 connected to the computer network;
4 selectively storing time stamps with the trace data;
5 using hardware circuitry to identify locations in the trace memory of trace data
6 associated with selected time stamps; and
7 utilizing the locations identified by the hardware circuitry to generate a time index
8 for the trace data stored in the trace memory.

1 18. The method of claim wherein the trace data is stored in the trace memory as a series of
2 blocks of trace data and the hardware circuitry searches for an initial time stamp encountered in
3 each block of trace data and the initial time stamps are utilized to generate the time index.